CLAIMS

1. A method, comprising:

   receiving a user request into a coordinating device;

5   processing with said coordinating device a service description information for each of a plurality electronic devices available ad-hoc to identify functionally responsive combinations of electronic devices capable of servicing said user request;

   calculating a score for each such functionally responsive combination,

10   said calculating using user preference information;

   configuring said available electronic devices into an ad-hoc combination according to said scores; and

   servicing said user request with said ad-hoc combination.

15   2. The method of claim 1, further comprising:

   building said service description information for a respective device from a service identifier, which is representative of a function which said device is able to provide; at least one required service identifier, each at least one required service identifier being representative of services that said respective device requires to provide

20   said function; device attribute information, which is representative of characteristics of said device; and attribute values, which are representative of a relative score for a respective device attribute.

   3. The method of claim 2, further comprising:

25   including in said identification of functionally responsive combinations identifying devices having a service identifier which corresponds to said user request and thereafter combines each of said identified devices with other devices, each other device having a service identifier which matches a required service identifier of a respective identified device.

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   4. The method of claim 3, further comprising:

   computing a separate device score for each device included in a functionally responsive combination, such that for each device said computing uses said

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device's attribute values and weighs said attribute values according to said user preference information.

5. The method of claim 4, further comprising:

weighting said attributes values with a device-level policy comprising a vector of weights which encodes said user preference information for said device attributes.

6. The method of claim 3, further comprising:

selecting a device–level policy from a predefined group of device-level policies.

7. The method of claim 6, further comprising:

computing said device score as:

$$DS(D, DP) = \sum_{i=1}^{d} aw_i(DP) * D(v_i)$$

where:

DS is said device score for device D according to a device-level policy DP;

d is said number of attributes for said device;

$aw_i(DP)$ is said weight of attribute i according to policy DP; and

$D(v_i)$ is said device's value (v_i) for attribute i.

8. The method of claim 4, further comprising:

using said device scores for each device in a functionally responsive combination such that each device score is weighting according to said user preference information.

9. The method of claim 8, further comprising:

using a parameter which is indicative of said availability of said device.

10. The method of claim 9, further comprising:

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encoding a vector of weights for said user preference information for said device's in a combination.

11. The method of claim 9, further comprising:

computing for each functionally responsive combination said combination score as:

$$AS(A, AP) = \sum_{i=1}^{n} sw_i(D, AP) * e(D_i) * DS_i(D, DP_i)$$

where:

A is a particular combination;

AP is a combination-level policy;

AS is said combination score;

n is said number of devices that are included in said particular combination;

sw_i is said weight assigned to said device of type i according to said combination policy AP;

DS_i is said unweighted device score for device D_i; and

$e(D_i)$ is a percentage indicating said availability of said device D_i.

12. A programmable apparatus for selecting a combination of electronic devices from a plurality of available electronic devices for performing a user request, each electronic device having service description information associated therewith, said apparatus comprising:

user interface means for receiving a user request;

a processor for said service description information for said available electronic devices to identify functionally responsive combinations of electronic devices, each functionally responsive combination responsive said user request; and for calculating a score for each functionally responsive combination, said calculating using user preference information; and for selecting one of said functionally responsive combinations according to said scores.

13. The apparatus according to claim 12 wherein said service description information for a respective device comprises:

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a service identifier, which is representative of a function which said device is able to provide;

required service identifier, which is representative of services that said device requires to provide said function;

5 device attribute information, which is representative of characteristics of said device; and

attribute values, which are representative of a relative score for a respective device attribute.

10 14. Computer data storage media having programmed thereon computer software instructions to make a programmable device execute said following steps:

receiving a user request;

processing service description information for each of plural available devices to identify functionally responsive combinations of devices, each functionally

15 responsive combination responsive said user request;

calculating a score for each functionally responsive combination, said calculating using user preference information; and

selecting one of said functionally responsive combinations according to said scores.

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15. Computer data storage media according to claim 14 wherein said computer software instructions comprise run time software modules and configuration software modules, said run time modules comprising:

a user interface module for receiving said user request;

25 a service registration and look up module for registering said service description information for said available devices;

an aggregator module for identifying said functionally responsive combinations of devices;

an evaluator module for calculating said scores for each of said

30 functionally responsive combinations;

and wherein said configuration modules include:

a service repository for storing said service description information for each registered device;

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a policy repository for storing policy information; and

user preference history files for storing historical user preference and contextual information.